

Genetic information presents many new opportunities to improve health and prevent disease, especially in chronic disease programs where genetic variation is only recently being accepted as a significant risk factor in the development of such common adult diseases as diabetes, cancer, and cardiovascular disease. Gradually, the public health community is beginning to recognize opportunities for using genetic information in prevention activities. For each opportunity, however, significant barriers exist that must be first identified and overcome. The most efficient long-range plan for integrating genetics into public health programs and practice will be one that recognizes the opportunities as they appear, identifies the barriers, and determines the necessary steps to meet the challenges of using genetic information to prevent disease and improve health.

Recognizing Opportunities	Identifying Barriers	Meeting Challenges
Genetic information provides new tools for old problems by identifying and assessing an additional risk factor for complex disease.	Genetics is a nonmodifiable risk factor.	Account for both environmental and genetic risk factors to find more complete solutions for preventing chronic diseases.
Genetics is adding to our knowledge of biology of health and disease.	People may misinterpret the information or act on information that is incomplete.	Maintain an awareness of important discoveries that shed light on the mechanisms of health and disease and proper context for application. Follow or participate in research studies that measure the effectiveness of prevention interventions in relation to genetic variations at the population level.
Genetic information may allow stratification of populations into groups with greater, moderate, and average susceptibility for chronic diseases.	Populations at average risk for chronic disease may not follow prevention interventions.	Follow or participate in research studies that develop effective messages for average-risk populations. Document trends to intervention uptake and acceptability in average-risk populations that are stratified on the basis of genetics. Develop health communication messages or other interventions to counter this trend, if necessary. Access and address the barriers to incorporating recommended interventions.
Insights based on gene-environment interactions can be used to tailor chronic disease prevention strategies for specific populations.	People may confuse genetic susceptibility with clinical disease destiny.	Assess public understanding of and concerns about using genetic susceptibility in public health interventions. Develop health communication messages that counter erroneous beliefs and measure their effectiveness. Document improved outcomes in high and moderate risk groups from targeted interventions.
Populations at high and moderate risk for chronic disease can be targeted for more intensive intervention.	Moderate or high-risk populations may be labeled or stigmatized because of genetic predisposition.	Promote public policies that provide protection from genetic discrimination. Follow or participate in research to assess how health and well-being are affected by including genetic information in intervention strategies.
Genetic testing may be used in the prevention or treatment of chronic diseases.	Improper application, interpretation and misuse of genetic test results are potential harms associated with genetic tests.	Provide education to providers on proper administration of genetic tests. Promote appropriate referral for genetic counseling services. Assess and document trends in test usage, interpretation, and outcomes.

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